

IN THE CLAIMS:

1. (Currently Amended) A method of fabricating a MEMS structure, comprising the steps of:
 - (fa) providing a wafer having at least a first insulating layer and a second layer;
 - (gb) removing a portion of the first layer through to the second layer to form a bridge member from the first layer;
 - (c) providing a substrate defining an upper surface, wherein a recess is formed in at least one of the substrate and the second layer of the wafer;
 - (ed) after step (bc), attaching the wafer to the upper surface of a the substrate to form a composite structure having an internal void formed therein, wherein the bridge member is aligned with the internal void, and wherein the substrate provides at least one wall that at least partially defines the void; and
 - (de) etching through the second layer of the wafer around the periphery of the bridge member to break through into the [recess] void, thereby releasing the bridge from the substrate.
2. (Original) The method as recited in claim 1, further comprising depositing a conductive layer onto the wafer.
3. (Original) The method as recited in claim 2, wherein the conductive layer is selected from the group consisting of aluminum, copper, silver, gold and nickel.
4. (Original) The method as recited in claim 1, wherein the wafer is selected from the group consisting of silicon, silicon carbide and gallium arsenide.
5. (Original) The method as recited in claim 1, wherein the substrate is a non-conductive substrate selected from the group consisting of glass, high resistivity silicon, crystalline sapphire, and ceramic.
6. (Original) The method as recited in claim 1, wherein the substrate is a conductive substrate selected from the group consisting of silicon, silicon carbide, and gallium arsenide.

7-9. Withdrawn

10. Cancelled

11. (Original) The method as recited in claim 1 ~~10~~, wherein the bridge member comprises silicon dioxide.

12. (Original) The method as recited in claim 1, further comprising etching an alignment hole into the wafer.

13. (Previously Amended) The method as recited in claim 12, further comprising thinning the wafer such that the alignment hole extends entirely through the wafer.

14. (Currently Amended) The method as recited in claim 1, wherein step (d~~e~~) further comprises forming a stationary conductive member extending from the substrate that is separated from the bridge via a variable size gap.

15. (Previously Cancelled)

16. (Currently Amended) A method of fabricating a MEMS structure, comprising the steps of:

- (a) providing a wafer having at least a first insulating member and a second member;
- (b) removing a portion of the first member through to the second member to form a bridge from the first member and a pair of spacers defining a recess therebetween;
- (c) attaching the spacers to a substrate to form a composite structure having an internal void formed therein, wherein the bridge is aligned with the internal void, and wherein the substrate provides at least one wall that at least partially defines the internal void; and
- (d) etching through the second member around the periphery of the bridge to break through into the recess and release the second member from mechanical communication with the substrate.

17. (Previously Amended) The method as recited in claim 16, further comprising etching an alignment hole through the first, and second members and substantially through the wafer.

18. (Previously Amended) The method as recited in claim 17, further comprising thinning the wafer such that the alignment hole extends entirely through the wafer.

19. (Original) The method as recited in claim 16, wherein the first member comprises a first layer and a second layer of selectively etchable materials, wherein the first layer is etched to form the spacers, and wherein the second layer is etched to form the bridge.

20. Cancelled

21. (Currently Amended) The method as recited in claim 19 20, wherein the second layer comprises silicon dioxide.

22. (Original) The method as recited in claim 19, wherein the first layer is selected from the group consisting of silicon nitride and polycrystalline silicon.

23. (Previously Amended) The method as recited in claim 16, wherein step (d) further comprises forming a stationary conductive member extending from the substrate that is separated from the bridge via a variable size gap.

24. Previously Cancelled

25. (Original) The method as recited in claim 16, wherein the second member comprises silicon.

26. (Original) The method as recited in claim 16, further comprising depositing and patterning a conductive layer onto the first layer.

27. (Original) The method as recited in claim 26, wherein the conductive layer comprises aluminum.

28. (Previously Amended) The method as recited in claim 16, wherein the substrate is selected from the group consisting of glass, high resistivity silicon, crystalline sapphire, crystalline silicon, polycrystalline silicon, silicon carbide, or ceramic.

29-32. Withdrawn

33. Previously Cancelled

34-48. Withdrawn

49. Previously Cancelled

50. Previously Cancelled

51. (Withdrawn) The method as recited in claim 39, further comprising etching an alignment hole through the first and second layers, and partially through the wafer.

52. (Withdrawn) The method as recited in claim 51, further comprising thinning the wafer such that the alignment hole extends entirely through the wafer.

53. (Currently Amended) A method of fabricating a MEMS structure, comprising the steps of:

(a) providing a wafer having at least a first layer and a second layer;
(b) removing a portion of the first layer to form a bridge member;
(c) providing a substrate, wherein a recess is formed in at least one of the substrate and the wafer;

(ed) after step (bc), attaching the wafer to a substrate to form a composite structure having an internal void formed therein, wherein the bridge member is aligned with the internal void; and

(de) etching through the second layer of the wafer around the periphery of the bridge member to break through into the void, thereby releasing the bridge from the substrate, ~~and forming a conductive member extending from the bridge, and forming a stationary member from the wafer that is separated from a stationary member by a variable size~~ the bridge member by a gap that varies in size in response to bridge member movement.

54. (Previously Added) The method as recited in claim 53, further comprising depositing a conductive layer onto the wafer.

55. (Previously Added) The method as recited in claim 54, wherein the conductive layer is selected from the group consisting of aluminum, copper, silver, gold and nickel.
56. (Previously Added) The method as recited in claim 53, wherein the wafer is selected from the group consisting of silicon, silicon carbide and gallium arsenide.
57. (Previously Added) The method as recited in claim 53, wherein the substrate is a non-conductive substrate selected from the group consisting of glass, high resistivity silicon, crystalline sapphire, and ceramic.
58. (Previously Added) The method as recited in claim 53, wherein the substrate is a conductive substrate selected from the group consisting of silicon, silicon carbide, and gallium arsenide.
- 59-61. Withdrawn
62. (Previously Added) The method as recited in claim 53, wherein the bridge member comprises an insulating material.
63. (Previously Added) The method as recited in claim 62, wherein the bridge member comprises silicon dioxide.
64. (Previously Added) The method as recited in claim 53, further comprising etching an alignment hole into the wafer.
65. (Previously Added) The method as recited in claim 64, further comprising thinning the wafer such that the alignment hole extends entirely through the wafer.
66. (Currently Amended) The method as recited in claim 53, wherein step (de) further comprises forming the stationary member extending outwardly from the substrate.

67. (Previously Added) The method as recited in claim 53, wherein the conductive member and stationary member are electrically isolated from one another.

68. (Previously Added) A method of fabricating a MEMS structure, comprising the steps of:

- (a) providing a wafer having at least a first member and a second member;
- (b) removing a portion of the first member to form a bridge and a pair of spacers defining a recess therebetween;
- (c) attaching the spacers to a substrate to form a composite structure having an internal void formed therein, wherein the bridge is aligned with the internal void; and
- (d) etching through the second member around the periphery of the bridge to break through into the recess and release the bridge ~~second member~~ from mechanical communication with the substrate, wherein the etching step forms a conductive member extending from the bridge and separated from a stationary member via a ~~variable-size gap~~ that varies in size in response to bridge movement.

69. (Previously Added) The method as recited in claim 68, further comprising etching an alignment hole through the first, and second layers and substantially through the wafer.

70. (Previously Added) The method as recited in claim 69, further comprising thinning the wafer such that the alignment hole extends entirely through the wafer.

71. (Previously Added) The method as recited in claim 68, wherein the first member comprises a first layer and a second layer of selectively etchable materials, wherein the first layer is etched to form the spacers, and wherein the second layer is etched to form the bridge.

72. (Previously Added) The method as recited in claim 71, wherein the second layer is made of an insulating material.

73. (Previously Added) The method as recited in claim 72, wherein the second layer comprises silicon dioxide.
74. (Previously Added) The method as recited in claim 71, wherein the first layer is selected from the group consisting of silicon nitride and polycrystalline silicon.
75. (Previously Added) The method as recited in claim 68, wherein step (d) further comprises forming the stationary member extending outwardly from the substrate.
76. (Previously Added) The method as recited in claim 68, wherein the conductive member and stationary member are electrically isolated from one another.
77. (Previously Added) The method as recited in claim 68, wherein the second member comprises silicon.
78. (Previously Added) The method as recited in claim 68, further comprising depositing and patterning a conductive layer onto the first layer.
79. (Previously Added) The method as recited in claim 78, wherein the conductive layer comprises aluminum.
80. (Previously Added) The method as recited in claim 68, wherein the substrate is selected from the group consisting of glass, high resistivity silicon, crystalline sapphire, crystalline silicon, polycrystalline silicon, silicon carbide, or ceramic.
- 81-102. Withdrawn